Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently Amended) A hot runner injection molding apparatus comprising:

(a) a melt conveying system, said system having[[:]],

(i) a melt distribution manifold having at least one melt passage for transferring melt from a source of pressurized melt, and,

(ii) at least one injection nozzle having a melt bore therethrough, said melt bore in fluid communication with said at least one manifold melt passage;

(b) at least one mold cavity adjacent said at least one nozzle, said mold cavity in fluid communication with said melt bore of said at least one nozzle; and

(c) a manifold heater, wherein said manifold heater includes a planar film heating element coupled to a manifold heater plate, wherein said manifold heater plate ~~film heating element~~ is connected to an exterior surface of said melt distribution manifold to provide heat to melt in said at least one melt passage.

2. (Currently Amended) An injection molding apparatus as claimed in claim 1, wherein said manifold heater includes a dielectric layer between said film heating element and said ~~melt distribution~~ manifold heater plate.

3. (Original) An injection molding apparatus as claimed in claim 1, wherein said film heating element has an inner face that faces towards said melt distribution manifold, and wherein said film heating element has an outer face, and said manifold heater includes an insulation layer that is positioned on said outer face.

4. (Original) An injection molding apparatus as claimed in claim 1, wherein said manifold heater includes a wire heater element.

5. (Original) An injection molding apparatus as claimed in claim 1, wherein said manifold heater includes a thermocouple element connected to said film heating element.

6. (Original) An injection molding apparatus as claimed in claim 1, wherein said film heating element includes a wire heater element and a thermocouple element connected to said film heating element.

7. (Currently Amended) A combination of a melt distribution manifold for an injection molding apparatus and a manifold heater comprising:[[,]]

a [[said]] melt distribution manifold having at least one melt passage for transferring melt from a source of pressurized melt to at least one injection nozzle; and, ~~wherein said~~

a manifold heater that includes a planar film heating element, wherein said film heating element is connected to an exterior surface of said melt distribution manifold to provide heat to melt in said at least one melt passage.

8. (Original) A combination as claimed in claim 7, wherein said manifold heater includes a dielectric layer that is adapted to be positioned between said film heating element and said melt distribution manifold.

9. (Original) A combination as claimed in claim 7, wherein said film heating element has an inner face that is adapted to face towards said melt distribution manifold, and wherein said film heating element has an outer face, and said manifold heater includes an insulation layer that is positioned on said outer face.

10. (Original) A combination as claimed in claim 7, wherein said manifold heater includes a wire heater element.

11. (Original) A combination as claimed in claim 7, wherein said manifold heater includes a thermocouple element connected to said film heating element.

12. (Original) A combination as claimed in claim 7, wherein said film heating element includes a wire heater element and a thermocouple element connected to said film heating element.

13. (New) The injection molding apparatus of claim 1, wherein said manifold heater plate is made of a parent material that is at least partially infiltrated with a second material having a different thermal conductivity than the parent material.

14. (New) The injection molding apparatus of claim 13, wherein the thermal conductivity of the second material is higher than the thermal conductivity of the parent material.

15. (New) The combination of claim 7, wherein said film heating element is coupled to a manifold heater plate and said manifold heater plate is connected to the exterior surface of said melt distribution manifold.

16. (New) The combination of claim 15, wherein said manifold heater plate is made of a parent material that is at least partially infiltrated with a second material having a different thermal conductivity than the parent material.

17. (New) The combination of claim 16, wherein the thermal conductivity of the second material is higher than the thermal conductivity of the parent material.